

Claims

1. Piston (1) for an internal combustion engine,
- having an essentially cylindrical basic body (2) made of aluminum, whose one face forms a piston head (3),
 - having pin bosses (8) with pin bores (6) disposed on the underside of the basic body (2) that faces away from the piston head (3),
 - having skirt elements (9) that connect the pin bosses (8) with one another,
 - having a ring element (4) of Ni resist disposed in the radially outer edge region of the piston head (3), which forms a ring-shaped cooling channel (22) with the basic body (2), and that is attached to the basic body (2) by way of a screw connection that consists of an inside thread (25) lying between the cooling channel (22) and the lower face (12) of the ring element (4), on its side that lies radially on the inside, and a matching outside thread (26) disposed on the mantle surface (14) of the basic body (2), below the cooling channel (22),

characterized in that

- the ring element (4) is configured in two steps, in cross-section,
 - = whereby the first step, on the piston head side, is formed in that a collar (16), step-shaped in

cross-section, radially directed inward, is molded onto the region of the ring element (4) on the piston head side, followed by the cooling channel (22) on the pin boss side, and

= whereby the second step is formed in that the ring element (4) has a ring-shaped contact surface (27) that lies parallel to the piston head (3), between the cooling channel (22) and the inside thread (25), proceeding from the cooling channel (22) and pointing radially outward, which comes to rest on a contact surface (28) when the ring element (4) is screwed onto the basic body (2), which surface is molded into the basic body (2) on the piston head side, between cooling channel (22) and outside thread (26),

- and that the ring element (4) has a wall region (29) between the contact surface (27) and the inside thread (25), which lies axially and is thinned to such an extent that it can be stretched in the axial direction when the ring element (4) is screwed onto the basic body (2).

2. Piston (1) for an internal combustion engine according to claim 1, **characterized in that** the collar (16) has a ring surface (17) on its lower side that faces away from the piston head (3), which surface lies essentially parallel to

the piston head (3), that a recess (18) is molded into the radially outer region of the piston head (3), which recess is step-shaped in cross-section, and has a shape that is essentially complementary to the collar (16), and that a ring-shaped sealing element (19) configured in the manner of a plate spring is disposed between the ring surface (17) and the recess (18), which element can be deformed when the ring element (4) is screwed onto the basic body (2).

3. Piston (1) for an internal combustion engine according to claim 1 or 2, **characterized in that** the basic body (2) is produced by means of forging.
4. Piston (1) for an internal combustion engine according to one of the preceding claims, **characterized in that** the ring element (4) is produced by means of a casting method.
5. Piston (1) for an internal combustion engine according to one of the preceding claims, **characterized in that** the ring element (4) has a groove (11) for a compression ring on its radially outer mantle surface (10), and that the lower face (12) of the ring element (4) forms at least the radially outer part of the upper groove wall of a ring groove (13) that is molded into the basic body (2).

6. Piston (1) for an internal combustion engine according to one of the preceding claims, **characterized in that** the basic body (2) has a ring-shaped, elastically resilient projection (30) directed radially outward, which projection forms the recess (18) on the piston head side, forms the delimitation of the cooling channel (22) on the piston head side, and can be deformed when the ring element (4) is screwed onto the basic body (2).